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The following table exhibits the distribution in time of the species of the suborder Condylarthra:

PERIPTYCHIDÆ.			
	<i>Puerco ep.</i> <i>Wasatch ep.</i>		
Hexodon	1		
Ectoconus	1		
Periptychus	3		
Hemithlæus	2		
Anisonchus	5		
Haploconus	4		
Zetodon	1		17
PHENACODONTIDÆ.			
Anacodon		1	
Protoponia	2		
Phenacodus	2	7	
Diacodexis		1	13
MENISCOTHERIIDÆ.			
Meniscotherium		3	3
			33

EXPLANATION OF PLATES.

PLATE XXVIII.

Skull of *Phenacodus primævus*, from specimen figured in Plate XXIX, one-half nat. size. Fig. *a*, right side of skull; *b*, top of skull; *c*, right mandibular ramus from above.

PLATE XXIX.

Skeleton of *Phenacodus primævus*, one-seventh nat. size; found by Mr. J. L. Wortman, and mounted by Mr. J. Geismar. From the Wasatch beds of the Big Horn river, Wyoming. (This plate was published in the NATURALIST, 1883, p. 535, and there erroneously stated to be one-fourth natural size.) Mus. Cope.

PLATE XXX.

Skeleton of *Phenacodus wortmani*, two-ninths nat. size, found by Mr. J. L. Wortman in the Wasatch beds of the Big Horn river, Wyoming, and mounted by Mr. J. Geismar. Mus. Cope. Fig. *a*, *manubrium sterni*.

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EDITORS' TABLE.

EDITORS: A. S. PACKARD, JR., AND E. D. COPE.

— The use of trinomial nomenclature in biology has been revived in the United States during the last ten years, and its adoption has been easy because it supplies a want. Subspecies are often very recognizable, as are in fact species which inosculate with other species at the present time, so as to be inseparable by definition. For the recognition of such forms the trinomial nomenclature is indispensable.

All the innovations in nomenclature from this side the water

have not been, in our opinion, so happy. We note four such which have not been generally adopted, though they have advocates in some quarters: (*First*) The type of a genus shall be the species which stands first on the list made by the original describer. This method has been generally discarded, and the law of exclusion been adopted in its stead. That is, the species remaining after others have been subtracted as representing new genera, bears the earliest generic name. (*Second*) When an existing specific name has been used for a genus, the same name shall continue to be used for the species instead of a new one. There result from this method such names as *Sialia sialis*, *Mephitis mephitica*, *Calamus calamus*, *Scomber scomber*, etc. It would seem superfluous to object to such names were it not that they have advocates. Dr. Lydekker's assertion that they are "ridiculous" seems to us to cover the ground. We know of no argument in their favor. (*Third*) Any generic name which is attached to the description of a species shall be regarded as the generic name of that and other congeneric species, whether such genus has been defined or not. This proposition has been negatived by the almost entire vote of American naturalists who responded to the circulars of the Dall committee on nomenclature of the American Association for the Advancement of Science for 1877. Nevertheless some American naturalists adopt such *nomina nuda*. (*Fourth*) That a name once used cannot be used again, though it be an evident synonym. To discard a name because it may be found in some list of synonyms seems to us to be increasing rather than diminishing confusion. To put the present system of nomenclature through a process of renovation such as this proposition requires, would be impracticable. Hence we disapprove of such names as *Zapus*, *Amphisaurus*, etc.

We add a consideration respecting the adoption of the names of higher groups, as families, orders, etc. We propose the following rules as agreeing most nearly with present practice, and as fulfilling most nearly the object of all rules, the securing of justice to persons concerned. We propose that names of all divisions higher than genera:

- I. Be only adopted when accompanied by a definition.
- II. That they be preserved for the division for which their original proposers intended them as nearly as possible.

NOTE.—What their proposers intended them for can as often

be learned from the contents of such divisions as from the definition, since in early stages of the science definitions are always defective. This rule will be definitive of the action of the law of priority which is now often neglected in the case of the higher divisions.

— Good illustrations are an important part of scientific literature, and in some of the departments essential. This is especially true of embryological and histological work. The difficulty encountered in the United States is the comparative expensiveness of the ordinary processes. For several years American naturalists and institutions have been seeking for cheaper methods. The Smithsonian Institution and the National Museum have been especially active in this work, doubtless with the excellent object of securing the greatest good to the greatest number. There are many phototypic processes, and many of them have been tried. We are sorry to have to confess that the results have not been as successful as has been hoped. These processes do well enough for fugitive literature, but for permanent scientific work they are rarely good. In the case of line drawings the metal appears to be too soft, and breaks more or less during the process of manufacture. The strong shades of direct photography will forever, we fear, prevent their displaying surfaces clearly, except in the medium lights. The alternative seems to be to endeavor to secure the best illustrations at cheaper rates than are now paid. If we do not do so, there are strong symptoms that the best American work will seek European channels of publication.

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RECENT LITERATURE.

BIOGEN, BY DR. COUES.¹—The present 12mo volume consists of a lecture delivered before the Philosophical Society of Washington, with introduction, preface and a liberal appendix. In the Preface we find a narrative account of the reading of the paper, and the criticisms, with elicited comments thereon. The Introduction is an extract from the official record of the meeting of the society on the same occasion. The first is written in Dr. Coues's graphic and entertaining style. The lecture itself is agreeable reading. As to the philosophy of the lecture, it may be summarized thus: As a biologist and familiar with animals, Dr. Coues perceives more in life than unintelligent forces, and he insists on its essential diversity from them. To sustain this position he cites many of the arguments usually adduced on this side of the question, some of which are very pertinent, but none of which are conclusive. However, towards the end of his remarks he takes the real and impregnable position of the vitalists, in the

¹ Biogen. Speculation on the origin and nature of Life. By Professor Elliott Coues. Boston: Estes & Lauriat, 1884.